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USPTO

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From: Streets & Steele **Our Ref:** LYNN/0151
Melba Fuentes **Serial No:** 10/084,829
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9/12/05 *Melba Fuentes*
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Attached please find the following document for the above referenced patent
application:

- 1) Reply Brief [9 pages].

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SEP 12 2005

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellant: Don Elrod

Confirmation No: 3470

Serial No.: 10/084,829

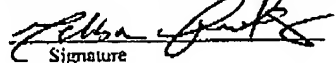
Examiner: Margaret Einsmann

Filed: February 28, 2002

Group Art Unit: 1751

For: Antimicrobial Fabrics Through
Surface Modification

By Facsimile: 571-273-8300

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REPLY BRIEF

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REPLY BRIEF

Appellant hereby files its Reply Brief pursuant to 37 C.F.R. 41.41.

a. Claims 17-19, 21-26, 28-30, 34-53 stand rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 4,810,567 issued to Calcaterra, et al.

(1) Each and every element of independent claim 17 as set forth in Appellant's claim is not found, either expressly or inherently described in the cited prior art reference. Appellant claims, *inter alia*, grafting a polymerizable monomer to the fabric surface, wherein the grafted fabric comprises a disinfectant *that is the polymerizable monomer or a derivative of the polymerizable monomer.* (Claim 23).

The Examiner cites Calcaterra as describing methods of chain termination that includes the addition of oxygen to form a peroxy radical that then abstracts a hydrogen to form the hydroperoxy group, -OOH. (Examiner's Answer, p. 4). First, Calcaterra discloses that the monomers undergo polymerization with each other so that the monomers no longer exist as monomers but are instead, copolymers. As Calcaterra states, "The radical chain is eventually terminated, and the result is a *copolymer* of the vinylic compound *grafted* onto the fabric." (Calcaterra, col. 8, lines 30-33) [Emphasis added]. Therefore, Calcaterra discloses a fabric comprising *copolymers* of the monomers that are reacted to provide the *copolymers* grafted to the fabric.

Calcaterra then discloses that the chain termination of the copolymerization process may proceed in a variety of processes, including the one cited by the Examiner above. (Calcaterra,

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col. 8, lines 33-42). However, at this point, the monomer is not grafted to the fabric but the *copolymer* is grafted to the fabric of Calcaterra, which is not what Appellant claims.

A simple comparison of the drawings illustrates the differences between what Calcaterra discloses and what Appellant claims. The figure shown on page 8 of the Specification shows a monomer grafted to a fabric, *i.e.*, the peracid grafted to a cotton fabric as illustrated. By contrast, Calcaterra discloses a copolymer grafted to the fabric as shown in col. 8, line 60, wherein Calcaterra clearly discloses not a monomer or its derivative grafted to the fabric, the limitation claimed by Appellant, but instead a *copolymer* grafted to the fabric that has a termination end group, designated as T. For example, Calcaterra provides an example of a copolymer grafted to the fabric, wherein the copolymer has a molecular weight of 2000. (Calcaterra, col. 13, line 30).

Appellant claims grafting a polymerizable monomer to the fabric, wherein the grafted fabric comprises a disinfectant **that is** the polymerizable *monomer* or a *derivative* thereof. Appellant claims that the *monomer* or a *derivative thereof* is the *disinfectant*, which means Applicant claims a monomer is grafted to the fabric, not a monomer that has been reacted to from a copolymer that is bonded to the fabric.

The Examiner's Answer states that because the monomers are used to create the polymers that are bonded to the fabric, therefore the monomers are bonded to the fabric. (Examiner's Answer, p. 5). Appellant respectfully asserts that the Examiner's argument is false. Using the Examiner's argument, one could claim that *hydrogen* is grafted to the fabric because hydrogen makes up the copolymer of Calcaterra. Appellant respectfully asserts that *hydrogen* is no more grafted to Appellant's claimed fabric than *copolymers* are grafted to Appellant's claimed fabric. Appellant claims that *monomers*, or their *derivatives*, are grafted to the claimed fabric.

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Furthermore, not only does Appellant claim that *monomers* are grafted to the fabric, but Appellant also claims that the disinfectant is the monomer or derivative thereof that is grafted to the fabric. Therefore, Appellant claims the *monomers still exist* as monomers and furthermore, that the monomers or their derivatives *are* the disinfectant. Therefore, Appellant claims *monomers* grafted to the fabric in the form of *monomers* and not in the form of *copolymers*, as disclosed by Calcaterra. Appellant claims that the monomer itself, or a derivative of the monomer, is a disinfectant grafted to the fabric, not a copolymer as Calcaterra discloses.

Appellant respectfully asserts that the Examiner incorrectly states that the Calcaterra discloses that a monomer is grafted to the fabric surface and that the monomer may be terminated with a hydroperoxy group. (Examiner's Answer, p. 6). The disclosed termination by Calcaterra is *not the termination of the monomer*, as stated by the Examiner, but is instead the termination of the *copolymer* as discussed above and as the Examiner *correctly* stated on page 4 of the Examiner's Answer. Therefore, Appellant respectfully asserts that the Examiner's argument that Calcaterra discloses termination with an -OOH group *of monomer* grafted to the fabric is incorrect and not supported by Calcaterra.

As the Examiner has correctly stated, it is the *fabric* which is a product by process claim that is being examined and not the process. It is the Appellant's burden to prove that the product is patentably distinct. Appellant has shown that Calcaterra discloses a fabric having *copolymer* grafted to the fabric while Appellant has shown and claimed a fabric having a *monomer* grafted to the fabric. A monomer is not a copolymer, but is instead only the building blocks of the copolymer. Appellant does not claim a *copolymer* grafted to the fabric as Calcaterra discloses but instead, claims a *monomer* grafted to the fabric.

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Because Calcaterra does not disclose, suggest or teach that (1) a monomer may be grafted to a fabric and that (2) the fabric comprises (3) a disinfectant *that is* (4) the polymerizable monomer or a derivative thereof, Appellant respectfully asserts that a *prima facie* case of anticipation or in the alternative, of obviousness, has not been presented. Therefore, Appellant respectfully requests that independent claim 17, as well as the claims depending therefrom, as presented on appeal be found patentable.

(2) Each and every element of independent claim 34 as set forth in Appellant's claim is not found, either expressly or inherently described in the cited prior art reference. Appellant claims, *inter alia*, grafting a carboxylic acid to the fabric surface and oxidizing the carboxylic acid to a regenerable percarboxylic acid, wherein the *percarboxylic acid is covalently bonded to the fabric*. (Claim 34). As the Examiner states in the Examiner's Answer, and as discussed above, the only teaching of Calcaterra of an -OOH group is as a copolymer chain terminator. Since the copolymer *chain terminator* is *not* covalently bonded to the fabric, but is instead *only bonded to the copolymer*, Appellant respectfully asserts that Calcaterra does not disclose, teach or suggest each and every limitation claimed by Appellant.

Furthermore, Calcaterra does not teach, suggest or disclose that the -OOH group is added to a carboxylic acid to form a peracid. Again, referring to the figure disclosed by Calcaterra, col. 8, line 60, even if the -OOH was the terminator (T) shown in the figure, the resulting compound *would not be a peracid* as claimed by Appellant. There is no teaching or suggestion within Calcaterra *of a peracid covalently bonded to the fabric surface* as claimed by Appellant.

Furthermore, the Examiner has provided no *evidence* of a motivation to modify Calcaterra to an extent that would lead one having ordinary skill in the art to bond monomer dipercarboxylic acid to a fabric surface.

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Because Calcaterra fails to disclose each and every limitation claimed by Appellant, Appellant respectfully asserts that a *prima facie* case of anticipation, or in the alternative, of obviousness has not been presented. Therefore, Appellant respectfully requests the Board to find that independent claim 34 and all claims depending therefrom as presented on appeal are patentable.

(3) Each and every element of dependent claims 8 as set forth in Appellant's claim is not found, either expressly or inherently described in the cited prior art reference. Appellant claims, *inter alia*, grafting a monomer that is a carboxylic acid to the fabric surface, wherein the grafted fabric comprises a disinfectant that is a peracid that is a derivative of the carboxylic acid and the *peracid is formed on the fabric surface.* (Claims 23, 7, 8).

Again, the teaching of Calcaterra that a *copolymer chain* that is grafted to a fabric may be *terminated* by an -OOH group does not disclose, teach or suggest that a carboxylic acid is grafted to the fabric and that the carboxylic acid is reacted to form a derivative in the form of a peracid by reacting the carboxylic acid with a mineral acid and hydrogen peroxide to form “the peracid on the fabric surface.” (Claim 8).

First, Calcaterra does not teach, suggest or disclose that the -OOH group is added to a carboxylic acid to form a peracid. Again, referring to the figure disclosed by Calcaterra, col. 8, line 60, even if the -OOH was the terminator (T) shown in the figure, the resulting compound would not be a peracid as claimed by Appellant. There is no teaching within Calcaterra of a *peracid* formed the fabric surface as claimed by Appellant.

Therefore, Calcaterra does not disclose, teach or suggest grafting a carboxylic acid to the surface of a fabric and converting the carboxylic acid to a peracid, which is the disinfectant of the fabric. Again, it is the fabric that is being examined, not the method of making. Calcaterra

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has no teaching, suggestion or disclosure of a *peracid*. Furthermore, the -OOH terminator disclosed by Calcaterra does not form a peracid. As Appellant shows in the drawing on page 8 of the Specification, a peracid must have (1) the -OOH group (2) bonded to a carbon and (3) an oxygen bonded with a double bond to the same carbon. While Calcaterra discloses that a chain terminator -OOH may be used to terminate the copolymer, Calcaterra does *not* disclose, teach or suggest that the resulting compound is a peracid as claimed by Appellant. In fact, looking at the figure shown by Calcaterra in col. 8, line 60, if the T terminator shown therein was the -OOH group, the resulting compound would *not be a peracid*.

Appellant specifically claims a **peracid formed on the surface of a fabric**. Calcaterra simply fails to disclose, teach or suggest this claimed limitation because at best, it discloses the bonding an -OOH group *to a copolymer, not to the fabric*. Therefore, Calcaterra fails as a prior art reference in support of the Examiner's rejection. Appellant respectfully requests that the Board find claim 8 as presented on appeal to be patentable.

(4) Appellant's claimed invention is patentably distinct over the cited prior art. The Examiner would like to ignore that Appellant specifically claims that monomer or a derivative thereof, *not copolymer*, is grafted or bonded to the surface of the fabric. Appellant respectfully asserts that such a difference between the claimed invention and the disclosure of Calcaterra is patentably distinct.

The Federal Circuit has made clear that all claim limitations must be considered and that it is impermissible to merely consider the "idea" of an invention. In *Jones v. Hardy*, 727 F.2d 1524 (Fed. Cir. 1984), the Federal Circuit stated:

Under the patent statute, Title 35 U.S.C., "ideas" are not patentable; claimed structures and methods are. Reducing a claimed invention to an "idea," and then determining patentability

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of that "idea" is error. Analysis properly begins with the claims, for they measure and define the invention.

Id. at 1527 [citations omitted].

Appellant respectfully asserts that the Examiner has reduced Appellant's claimed invention to a mere idea of a fabric having disinfectant properties and, because the Examiner has found a prior art reference that describes a fabric having disinfectant properties, then Appellant's "idea" is not patentable. As the Federal Circuit has held, "Analysis properly begins with the claims, for they measure and define the invention." *Id.*

The Examiner asserts that Appellant's claimed invention is obvious over Calcaterra because the patentability of a product by process claim does not depend on the method of production and where the examiner has found a similar product, the burden rests with the applicant to prove the product is patentably distinct. (Final Office Action, p. 4). The Examiner makes no further effort to show any evidence of a motivation to modify Calcaterra.

The Examiner cites the *In re Brown*, 173 USPQ 685, 688 (CCPA 1972) that held:

The lack of physical description in a product-by-process claim makes the determination of patentability of the claim more difficult, since in spite of the fact that the claim may recite only process limitations, it is the patentability of the product claimed and not the process that must be established."

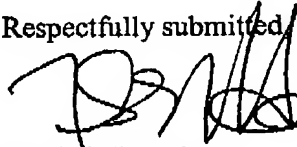
Id.

However, Appellant's claim *does not lack* physical description of the product. Appellant claims (1) a polymerizable *monomer* grafted to the fabric, wherein the monomer or a derivative thereof, is the disinfectant or (2) a percarboxylic acid *covalently bonded* to the fabric. Appellant's claims are not merely process limitations but also include structural limitations that the Examiner has glossed over or, as noted above, has attempted to match with Calcaterra by twisting the teachings and disclosure of Calcaterra.

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Therefore, for the foregoing reasons, Appellant respectfully asserts that Appellant has met the burden of proving that Appellant's claimed invention is patentably distinct over the cited prior art. Appellant respectfully requests the Board to find the claims presented on appeal to be patentable.

Respectfully submitted,



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